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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,241	04/09/2001	Yoshiaki Ogata	10873.661US01	7594
23552	7590	03/10/2004	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			CANTELMO, GREGG	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 09/829,241	<b>Applicant(s)</b> OGATA ET AL.	
	<b>Examiner</b> Gregg Cantelmo	<b>Art Unit</b> 1745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. In response to the amendment received January 16, 2004:
  - a. Claims 1-4 and 6 are pending. Claims 5 and 7-8 have been cancelled;
  - b. The prior art rejection or record are withdrawn in light of the amendment;
  - c. The amendment to claim 1 now positively requires the structure comprising both the mount frame and plurality of rectangular batteries. The previous claim language was interpreted as being limiting only to a mount frame having intended use for holding a plurality of battery modules (see item 4 of the previous office action, incorporated herein). Since the claims have been further limited by the amendment received January 16, 2004, a new grounds of rejection is presented necessitated by the amendment. As such this office action is subject to finality.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent No. 3,726,717 (Zaleski).

Zaleski discloses a mount frame 22 for a battery module for fixing a plurality of batteries 28-1 through 28-5 therein, the frame 22 comprising a plurality of openings 24 into which the batteries 28-1 through 28-5 are inserted and removed, the frame has unevenness 130 as does the batteries wherein the engaging surface unevenness in each battery 28-1 through 28-5 has a complimentary shape and orientation to the engaging surface unevenness 130 in the openings and wherein the grooves formed by the unevenness of the engaging surface of each opening 24 and the unevenness on the surface of each battery module 28-1 through 28-5 are parallel with the direction in which the battery modules are inserted and removed and wherein each battery module 28-1 through 28-5 is accommodated in a direction horizontal to at least one plane of the frame 22 (Figure 1 as applied to claim 1).

4. Claims 1, 2 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Design Patent No. 327,247 (Higuchi).

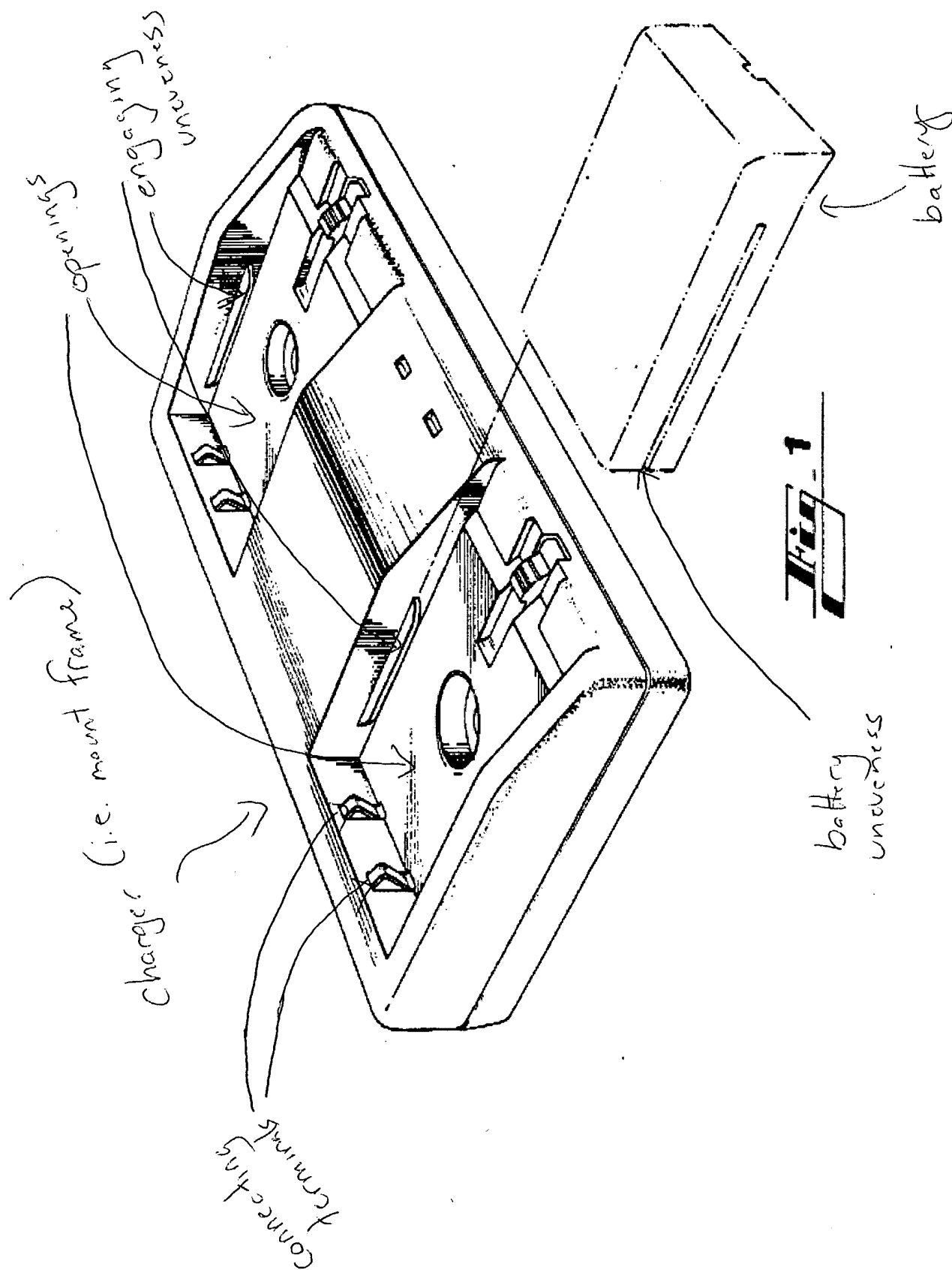
Higuchi discloses a mount frame in Fig. 1 for a battery module for fixing a plurality of batteries therein, the frame comprising a plurality of openings into which the batteries are inserted and removed, the frame has unevenness as does the batteries wherein the engaging surface unevenness in each battery through has a complimentary shape and orientation to the engaging surface unevenness in the openings and wherein the grooves formed by the unevenness of the engaging surface of each opening and the unevenness on the surface of each battery module through are parallel with the direction in which the battery modules are inserted and removed and wherein each

battery module through is accommodated in a direction horizontal to at least one plane of the frame (marked-up figure Figure 1 as applied to claim 1).

With respect to claim 2, the structure of the stacking member is not structurally defined apart from being that which can provide for stacking of additional frames. The top surface of the frame of Higuchi is flat and will functionally operate as a surface upon which additional frames of Higuchi can be stacked (Fig. 1 as applied to claim 2). While intended use recitations and other types of functional language cannot be entirely disregarded. However, in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); In re Otto, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). See also MPEP § 2114.

The frame comprises connecting terminals (marked-up Fig. 1) that engage and electrically connect to the terminals of the battery modules upon insertion of the modules into the frame (as applied to claim 6).

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***Response to Arguments***

Applicant's arguments filed January 16, 2004 have been considered but are moot in view of the new ground(s) of rejections.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. design patent No. 327,247 (Higuchi) in view of U.S. patent No. 6027,535 (Eberle) and U.S. patent No. 4,558,270 (Liautaud).

The teachings of claim 1, with respect to Higuchi, have been discussed above and are incorporated herein.

The differences not yet discussed are of the frame being metal and the frame comprising a cooling member on the frame (claim 3) and further wherein the cooling member is at least one selected from the group consisting of a cooling fin and a coolant channel (claim 4).

With respect to providing cooling to the charger frame of Higuchi:

Eberle discloses a battery charger in Figs. 1-4 wherein the charger housing or frame comprises plural coolant channels 18.

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The motivation for providing coolant channels of Eberle to the charger body of Higuchi is that it provides a more-effective cooling in the charger, since on the one hand the air throughput in the housing interior can be increased, and on the other a more-effective oncoming flow to the printed circuit board and the electrical components can be attained.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Higuchi by providing coolant channels to the charger frame as taught by Eberle is that it would have provide a more-effective cooling to the charger.

With respect to the charger of Higuchi being metal:

In light of the teachings of Eberle, there is clear motivation for providing improved cooling of the charger device.

Selection of a metal casing would have provided a material which has enhanced thermal conductivity and would have improved the heat dissipative characteristics of the charger of Higuchi when the cells are charging. For example, Liautaud teaches using aluminum charger casings since aluminum provides excellent impact resistance and heat dissipating properties to the charger casing (col. 2, ll. 40-50).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Higuchi in view of Eberle by selecting the housing to be metal since it would have provided a housing material having improved thermal conductivity and would have thus improved the impact



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resistance and heat dissipative characteristics of the charger frame. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

### ***Response to Arguments***

7. Applicant's arguments filed January 16, 2004 have been considered but are moot in view of the new ground(s) of rejections.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday to Thursday from 9 a.m. to 6 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregg Cantelmo  
Patent Examiner  
Art Unit 1745

gc  
  
March 3, 2004